

CLAIMS

1. A method of processing a surface of a nitride semiconductor crystal,
wherein

5 a surface of a nitride semiconductor crystal (11) is brought into contact with a liquid containing at least Na, Li or Ca as a processing solution (15).

2. The method of processing a surface of a nitride semiconductor crystal according to claim 1, wherein

10 said processing solution (15) is a liquid containing at least Na and has an Na content of 5-95 mol%.

3. The method of processing a surface of a nitride semiconductor crystal according to claim 1, wherein

15 said processing solution (15) is a liquid containing at least Li and has an Li content of 5-100 mol%.

4. The method of processing a surface of a nitride semiconductor crystal according to claim 1, wherein

said nitride semiconductor crystal (11) is an $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ semiconductor crystal ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$).

20 5. A nitride semiconductor crystal having a maximum depth of a surface scratch of at most $0.01 \mu\text{m}$ and obtained with a method of processing a surface of a nitride semiconductor crystal wherein a surface of a nitride semiconductor crystal (11) is brought into contact with a liquid containing at least Na, Li or Ca as a processing solution (15).

6. The nitride semiconductor crystal according to claim 5, wherein

25 said processing solution (15) is a liquid containing at least Na and has an Na content of 5-95 mol%.

7. The nitride semiconductor crystal according to claim 5, wherein

said processing solution (15) is a liquid containing at least Li and has an Li

content of 5-100 mol%.

8. The nitride semiconductor crystal according to claim 5, wherein
said nitride semiconductor crystal (11) is an $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ semiconductor
crystal ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$).

5 9. A nitride semiconductor crystal having an average thickness of a damaged
layer of at most 2 μm and obtained with a method of processing a surface of a nitride
semiconductor crystal wherein a surface of a nitride semiconductor crystal (11) is
brought into contact with a liquid containing at least Na, Li or Ca as a processing
solution (15).

10 10. The nitride semiconductor crystal according to claim 9, wherein
said processing solution (15) is a liquid containing at least Na and has an Na
content of 5-95 mol%.

11. The nitride semiconductor crystal according to claim 9, wherein
said processing solution (15) is a liquid containing at least Li and has an Li
15 content of 5-100 mol%.

12. The nitride semiconductor crystal according to claim 9, wherein
said nitride semiconductor crystal (11) is an $\text{Al}_x\text{Ga}_y\text{In}_{1-x-y}\text{N}$ semiconductor
crystal ($0 \leq x \leq 1$, $0 \leq y \leq 1$, $0 \leq x + y \leq 1$).

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